

**UNITED STATES DEPARTMENT OF COMMERCE****United States Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/372,296 08/11/99 KOKER

A 42390.P6725

EXAMINER

TM02/0718

BLAKELY SOKOLOFF
TAYLOR & ZAFMAN LLP
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES CA 90025

SONG, J

ART UNIT

PAPER NUMBER

2187

DATE MAILED:

07/18/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/372,296

Applicant(s)

KOKER ET AL.

Examiner

Jasmine Song

Art Unit

2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

Detailed Action

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. The objection of claims 11 and 18 is **withdrawn** due to amendment.

Claim Rejections - 35 USC § 102

3. The reject of claims 1,4-8 and 11-15,18-21 are **maintained** under 35 U.S.C. 102(e).

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 1,4-8 and 11-15,18-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Genduso et al., U.S. Patent 5802569.

Regarding claim 1, 8 and 15, Genduso et al. teach a system comprising:

a memory (Fig. 1, element 107);
a bus (Fig. 1, element 130); and
a bus access circuit coupled to the memory and the bus to reduce latency in accessing the memory from the bus, the circuit comprising:
a pre-fetcher to pre-fetch a plurality of data from the memory to a cache queue (Fig. 2, element 105) in response to a request (col. 1, lines 42-47), and
a cache controller (Fig. 1, element 106) coupled to the cache queue and the pre-fetcher to deliver the pre-fetched data from the cache queue to the bus independently of the memory (col. 1, lines 32-47).

Regarding claim 4, 11 and 18, Genduso et al. teach a peripheral bus controller (Fig. 2, element 201) coupled to the bus and the pre-fetcher (Fig. 2, element 203) to determine if the request is valid (col. 3, lines 66 to col. 4, lines 15);

a data coherence controller (Fig. 6, col. 5, lines 38) coupled to the pre-fetcher to provide a purge signal (Fig. 6, element 617) when the request corresponds to a cache miss (Fig. 6, col. 5, lines 21-47); and

a scheduler (Fig. 2, element 201) coupled to the request queue (Fig. 2, element 209) and the data coherence controller to store entries corresponding to the requests, the entries being marked according to the purge signal from the data coherence controller (Fig. 6, col. 25-47).

Regarding claims 5,12 and 19, Genduso et al. teach processing the cache miss request comprises:

a data mover (Fig. 2, element 201) coupled to the cache queue and the scheduler to transfer data from the memory to the cache queue, the data mover purging data corresponding to a marked entry from the scheduler (Fig. 6, col.5, lines 25-47);

Providing a purge signal, marking an entry in a scheduler according to the purge signal; purging data corresponding to the marked entry (Fig.6, col.5, lines 25-47); and placing the request to the memory controller.

Regarding claims 6,13 and 20, Genduso et al. teach the bus is a peripheral component interconnect (PCI) bus (col.2, lines 52-54).

Regarding claim 7, 14 and 21, Genduso et al. teach the request is one of a 32-byte and a 64-byte request (col.1, lines 42-47).

Claim Rejections - 35 USC § 103

6. The rejection of claims 2-3,9-10 and 16-17 are **maintained** under 35 U.S.C. 103(a).

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious

Art Unit: 2187

at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-3,9-10 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Genduso et al., U.S. Patent 5802569, in view of Noya et al., U.S. Patent 5309451.

Regarding claim 2, 9 and 16, Genduso et al. teach the claimed invention (claim 1) and the request causes the memory controller transferring the plurality of data to the cache queue (col.1, lines 39-47), the request being buffered in a request queue (col.4, lines 16-62).

Genduso does not teach a watermark monitor to determine if an amount of data in the cache queue is above a predetermined level.

However, Noya et al. teach determining if an amount of data in the cache queue is above a predetermined level (col.5, lines 15-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a watermark monitor in the Genduso's system because it would indicate the cache is reached the predetermined level of the fullness, if it is not, keep prefetching the data from the system memory to cache.

Regarding claims 3,10 and 17, Genduso et al. teach transferring the data from the cache queue to the bus if the data in the cache queue is ready (Fig.2, col.4, lines 12-15).

Response to Applicant's Arguments

9. In response to applicant's argument that a queue is first-in-first-out (FIFO) data structure and a queue is not a random access memory as disclosed in Gesundo and Noya's reference. It is noted that a queue sometimes can be FIFO, sometimes is not (computer dictionary, third edition), a queue can be a data structure which removal is based on factors other than order of insertion. Also, nothing in claim requires the cache queue to be FIFO.

In response to applicant's argument that a queue is not a random access memory as disclosed in Gesundo and Noya's reference. It is noted that a queue is a data structure which can be stored in a RAM, EEPROM, disk etc.

In response to applicant's argument that a queue has no address because the order of accessing is fixed. It is noted that a queue does need the address to know where data belongs to memory, if there is no address, CPU does not know where the data read from memory or write to memory. need for address is independent of order of accessing. Also, the claims do not require order of accessing to be fixed.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

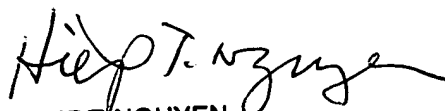
shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasmine Song whose telephone number is 703-305-7701. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Do H Yoo can be reached on 703-308-4908. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-9731 for regular communications and 703-305-9731 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Jasmine Song
Patent Examiner
July 16, 2001


HIEP T. NGUYEN
PRIMARY EXAMINER